

WHAT IS CLAIMED IS:

1. A friction force measurement apparatus measuring friction force between a fixed member fixed on a main body of a magnetic tape drive and a magnetic tape abrading the fixed member, the apparatus comprising:

5 a vibration detector which is joined with said fixed member and a vicinity of the fixed member and detects a vibration in abrasion of said magnetic tape with said fixed member; and

a calculation device which calculates the friction force between said fixed member and said magnetic tape based on a signal from said vibration
10 detector.

2. A friction force measurement apparatus according to claim 1, wherein a vibration input unit in which vibration of said vibration detector is input is directly contacted with said fixed member.

3. A friction force measurement apparatus according to claim 1, wherein a
15 low pass filter of which cutoff frequency is not less than 50 kHz is equipped between said vibration detector and said calculation device.

4. A friction force measurement apparatus according to claim 2, wherein a low pass filter of which cutoff frequency is not less than 50 kHz is equipped between said vibration detector and said calculation device.

20 5. A friction force measurement apparatus according to claim 1, wherein a recording device recording friction force calculated by said calculation device with time is equipped.

6. A friction force measurement apparatus according to claim 2, wherein a recording device recording friction force calculated by said calculation device
25 with time is equipped.

7. A friction force measurement apparatus according to claim 3, wherein a

recording device recording friction force calculated by said calculation device with time is equipped.

8. A friction force measurement apparatus according to claim 1, wherein said fixed member is a magnetic head.

5 9. A friction force measurement apparatus according to claim 2, wherein said fixed member is a magnetic head.

10. A friction force measurement apparatus according to claim 3, wherein said fixed member is a magnetic head.

10 11. A friction force measurement apparatus according to claim 1, wherein said vibration detector is an acoustic emission sensor.

12. A friction force measurement apparatus according to claim 2, wherein said vibration detector is an acoustic emission sensor.

13. A friction force measurement apparatus according to claim 3, wherein said vibration detector is an acoustic emission sensor.

15 14. A friction force measurement apparatus according to claim 1, wherein said fixed member is a guide portion regulating a width direction of a magnetic tape.

20 15. A friction force measurement apparatus according to claim 1, wherein said fixed member is a guide portion regulating a width direction of a magnetic tape.

16. A friction force measurement apparatus according to claim 2, wherein said fixed member is a guide portion regulating a width direction of a magnetic tape.

25 17. A friction force measurement apparatus according to claim 3, wherein said fixed member is a guide portion regulating a width direction of a magnetic tape.

18. A friction force measurement apparatus according to claim 1, wherein said vibration detector is pressed into a head of a screw.

19. A friction force measurement apparatus according to claim 2, wherein said vibration detector is pressed into a head of a screw.

5 20. A friction force measurement apparatus according to claim 3, wherein said vibration detector is pressed into a head of a screw.